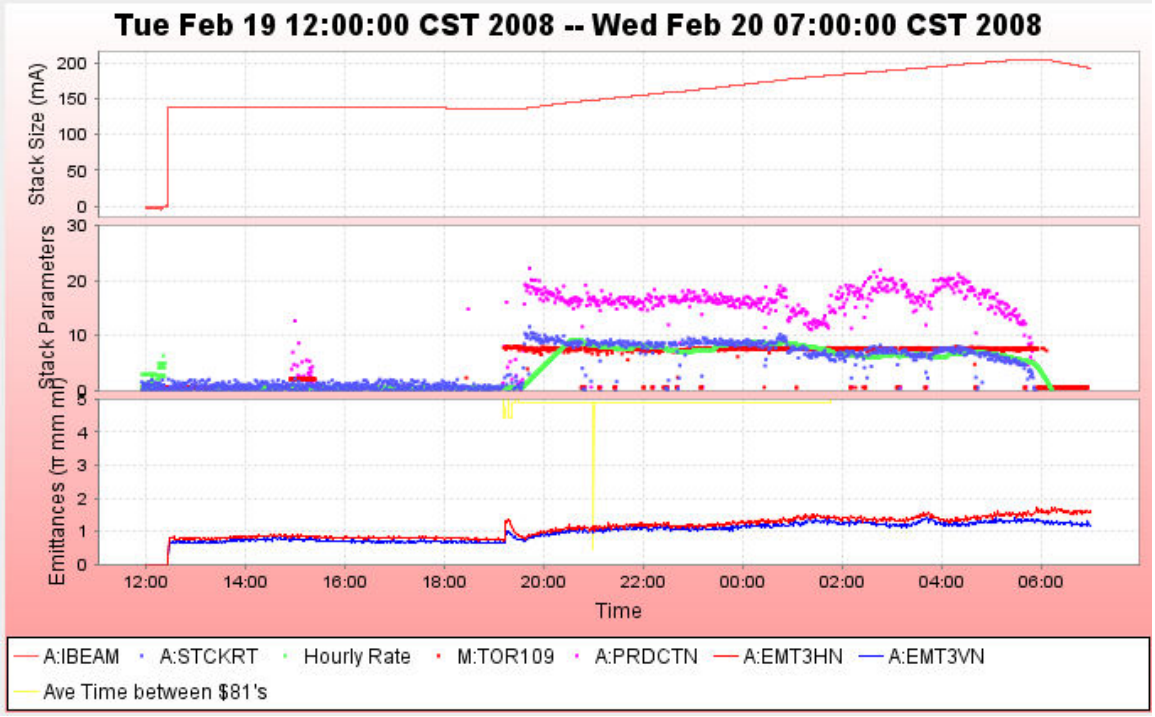
2008-02-20 Wednesday Morning Pbar Notes

Tuesday, February 19, 2008
4:32 PM

Stacking

- Sat on our 140mA stack through the day shift.
- Tuned the Flusher configuration to minimize emittances on the day shift.
- Stacked for part of the evening shift
- Most in an hour: 8.69 mA with an Average Production of 15.61 e-6/proton
- The peak stack size was 205mA, and we were still stacking about 3mA/hr.
- However, when beam went away, Pbar lifetime got very bad.
- Owl crew worked hard with the poor pbar lifetime, but we lost 19mA in total over about two hours.
- In the morning we came in to assist.
- The biggest improvement was increasing the stabilizing RF amplitude from 60V to 80V, getting the unstacking rate under 1mA/hr, and had positive stack rates when beam was available.



Transfers

- `No transfers!!!!

Maintenance

- Maintenance period.
  - DCCT
    - Experts found a problem in the upstairs DCCT electronics. One of the counting chips had failed causing the drive frequency to be wrong. Experts were able to complete repairs without impacting the DCCT calibration.
  - Ap0 target station work

        - Target SEM cables pulled.
        - Beam absorber water system was drained, flushed and refilled.
        - DI cartrage for the Lens water system was replaced.
    - Power supply work
        - Fixed D:QS724 problem of periodically dropping to zero amps. A bad backplane connector was replaced.
        - ARF1-1 had a driver tube and ENI replaced. This fixed a noisy output problem.
    - Controls
        - Pbar alarm block downloading problems was traced to the alarm download process that handles the alarms downloading on ALL FRONT ENDS, no just Pbar front ends. Other groups may want to check out their alarms on front ends that were rebooted since the start of this problem. Pbar saw problems as early as last Friday.

Pbar Work Done during MI access for RR Kicker Work

ID	Title	Location	Type
7472	The target station SEM has been removed from service since September 2007 and a new target SEM is currently being built. The SEM cables were temporarily removed from the vault into the AP0 service building where they can be rung out, repaired, and or replaced during stacking operations. The SEM scanner will also be checked out.	AP0 lower vault	Target Station
7534	Remove selected modules from upper vault storage rack for inspection. This was done to determine the potential for reuse for target station projects.	AP0 upper vault	Target Station
7596	The beam absorber water system had reached the upper recommended limit of activity. As a result, the system was drained, flushed, and refilled.	AP0 water cage	Target Station
7538	The DI cartridge on the lens water skid is showing signs that it is becoming depleted. Removed and replaced the DI cartridg.	AP0 water cage	Target Station
7574	The output current from D:QS724 has been intermittently dropping down to zero amps, over the past few weeks. The problem was found to be a bad connector on the backplane. The connector was replaced, which should fix the problem.	AP50	Power Supply
7576	The Accumulator DCCT readbacks started reading -500A at around 6am this morning. Dallas Heikkinen found a problem with the upstairs DCCT hardware. One of the counter chips had failed causing the drive frequency to be off. Since they had time they tuned up the chassis as much as we thought we could without requiring a new calibration.	AP10	Diag / Instr
	ARF1 had a noisy output. Investigation revealed that the problem was with the ARF1-1 HLRF. Both the driver tube and ENI needed replacement.	AP50	RF
	Pbar device alarm blocks were not being downloaded on front end reboots. The alarm download process for all front ends was found to be hung. Brian Kramper restarted the process, which appears to have fixed the problem.	Controls	Controls System

Requests

- The plans for today will be to keep our large stack stable and stack as well as we can when beam is available.

Other Numbers

- Paul's Numbers
    - Most in an hour: 8.69 mA at Tue Feb 19 20:39:00 CST 2008
    - Best: 25.19 mA on 30-Jan-08
    - Average Production 15.61 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
    - Average Protons on Target 6.90 e12 Best: 8.77 e12 on 07/24/2007
    - Largest Stack 204.78 mA Best: 271.01 mA on 11/14/2007

- Al's Numbers

    Stacking
    Pbars stacked: 66.32 E10

Pbars stacked: 66.32 E10
Time stacking: 11.04 Hr
Average stacking rate: 06.01 E10/Hr

Uptime
Number of pulses while in stacking mode: 7126
Number of pulses with beam: 6497
Fraction of up pulses was: 91.17%

The uptime's effect on the stacking numbers
Corrected time stacking: 10.06 Hr
Possible average stacking rate: 06.59 E10/Hr
Could have stacked: 72.74 E10/Hr

Recycler Transfers
Pbars sent to the Recycler: 00.00 E10
Number of transfers : 0
Number of transfer sets: 0
Average Number of transfer per set: 0.00
Time taken to shoot: 00.00 Hr
Time per set of transfers: 00.00 min
Transfer efficiency: □%

Other Info
Average POT : 6.96 E12
Average production: 14.66 pbars/E6 protons